Public Meeting and Online Survey on Wisconsin's Inland Trout Program

March 2014

Matthew G. Mitro, Martin P. Engel, Richard S. Stewart, and Jordan B. Petchenik

The Wisconsin Department of Natural Resources (DNR) initiated in 2011 a public participation process to review the state's inland trout program. The program was last reviewed in the early 1990's. The first step in the review process was to hold a series of public meetings in March 2011, during which DNR biologists presented trout stream monitoring results describing the past and current status of trout populations in Wisconsin. Meeting participants were also asked to complete a survey on Wisconsin trout fishing and the Wisconsin DNR's inland trout program. A paper copy of the survey was available at the public meetings, and an online version of the survey was also available for anyone who wanted to complete the survey, whether they attended a public meeting or not.

The public meeting and online survey (hereafter referred to as the public meeting survey) served a number of purposes: (1) to help initiate discussions about the trout program, (2) to collect feedback on the trout program from anyone who wanted to share their opinions, and (3) to help focus our efforts in developing a more extensive opinion survey mailed to a random subset of resident Wisconsin trout anglers in 2012. Whereas the subsequent 2012 mail survey was designed to be representative of those Wisconsin residents who purchased a fishing license and inland trout stamp in 2011, the public meeting survey, being open to all, cannot be considered representative of anyone not taking the survey. Nevertheless, results from this survey were considered instrumental in completing the review of the trout program and in guiding Wisconsin DNR efforts to make trout fishing better. Please refer to Petchenik (2014) for survey results on angler behavior, program assessment, and regulation and season preferences that are considered representative of resident Wisconsin trout anglers who purchased a fishing license and inland trout stamp in 2011.

The public meeting survey was completed by 1,905 individuals; 201 completed the survey at the public meetings and 1,704 completed the survey online. Results are presented for all surveys combined, and all percentages were calculated based on the total number of survey participants (n=1,905). Percentages may not total 100 because of rounding. Results are organized by survey question, with each question from the survey presented here in **bold font**. Tables and figures are numbered sequentially but also include an identifier that indicates the question to which the data in the table or figure refer. For example, Table 3 (Q4) refers to the third table in this report, which presents data from question number 4 in the survey.

1. Which types of trout do you fish for? (Please check all that apply.)

□ brook trout □ brown trout □ rainbow trout □ lake trout

Of the 1,905 survey participants, 1,899 identified at least one species of trout they fish for. Anglers primarily fish for Brown Trout (96%, *n*=1,826) and Brook Trout (93%, *n*=1,775) and to a lesser extent Rainbow Trout (70%, *n*=1,330) and Lake Trout (12%, *n*=235). The low percentage for Lake Trout reflects the limited inland fishing opportunities for Lake Trout, which are currently available for fishing in 12 inland lakes. Table 1 (Q1) shows the number and percentage of survey participants who identified fishing for different combinations of trout species.

TABLE 1 (Q1). Number and percentage of survey participants who fish for different combinations of trout species. Six (0.3%) survey participants did not respond to this question.

Brook Trout	Brown Trout	Rainbow Trout	Lake Trout	*n*	%
x	x	x		1,036	54
x	x			465	24
x	x	x	x	210	11
	x			54	3
	x	x		53	3
x				49	3
x		x		13	0.7
	x	x	x	8	0.4
		x		6	0.3
		x	x	3	0.2
x		x	x	1	0.05
x			x	1	0.05
				6	0.3

2. How do you describe yourself as a trout angler?

□ Beginner □ Experienced □ Expert □ Professional guide

Most survey participants described themselves as trout anglers as "experienced" (63%) followed by "expert" (23%) (Table 2 (Q2)). The results of this self-assessment can be interpreted as an indication that most survey participants consider themselves knowledgeable about trout fishing and have a vested interest in how Wisconsin trout fisheries are managed.

TABLE 2 (Q2). Survey participant self-assessment of their trout angling experience and skills.

Beginner	Experienced	Expert	Professional guide	No response
9%	**63%**	**23%**	**4%**	**0.6%**
n=180	*n*=1,201	*n*=442	*n*=71	*n*=11

3. How many years have you been trout fishing in Wisconsin? If this is your first year, write "1" in the space provided.

I have been trout fishing in Wisconsin for ____ years.

Survey participants represented a broad range of experience in terms of years fishing for trout in Wisconsin (Figure 1 (Q3)). About 29% (*n*=548) participants have trout fished less than 10 years in Wisconsin, 22% trout fished for 10-19 years (*n*=412), 14% for 20-29 years(*n*=260), 13% for 30-39 years(*n*=255), and 21% have trout fished for 40 or more years in Wisconsin (*n*=406). Six survey participants (0.3%) had never fished for trout in Wisconsin. About 1% (*n*=18) did not answer this question. Not indicated by these results is the extent of an angler's fishing experience in terms of number of years trout fishing in other states.

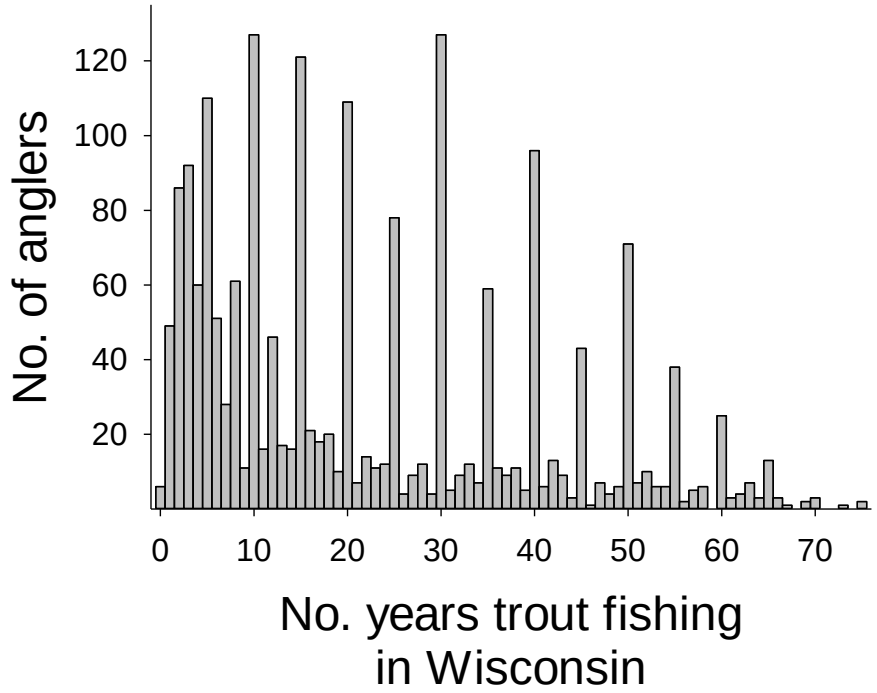

FIGURE 1 (Q3). Number of years of trout fishing experience in Wisconsin.

4. How many different Wisconsin trout streams do you typically fish in a given year?

□ 0 □ 1 □ 2-5 □ 6-10 □ 11 or more

Most survey participants (96%) identified themselves as typically fishing two or more trout streams in a given year, with 25% fishing more than ten different streams a year (Table 3 (Q4)).

TABLE 3 (Q4). Number of different trout streams fished by a survey participant in a typical year of trout fishing in Wisconsin.

0	1	2-5	6-10	11 or more	No response
2% *n*=33	**0.3%** *n*=6	**39%** *n*=751	**32%** *n*=607	**25%** *n*=476	**2%** *n*=32

5. How many different inland lakes or spring ponds in Wisconsin do you fish for trout in a given year?

□ 0 □ 1 □ 2-5 □ 6-10 □ 11 or more

Most survey participants (66%) did not respond to this question, which suggests that their primary interest in Wisconsin trout fishing is fishing in streams rather than inland lakes and ponds. For those survey participants who do fish lakes and ponds, they typically fish from 2 to 5 different inland lakes or spring ponds in a given year (33% of survey participants; Table 4 (Q5)).

TABLE 4 (Q5). Number of different inland lakes or spring ponds fished for trout by a survey participant in a typical year of trout fishing in Wisconsin.

0	1	2-5	6-10	11 or more	No response
2% *n*=42	**0.3%** *n*=6	**33%** *n*=614	**5%** *n*=101	**2%** *n*=37	**66%** *n*=755

6. Please indicate how often you fish for trout using the following methods:

Survey respondents showed a clear preference to fly fishing for trout. About 70% of survey respondents "frequently" or "always" used artificial flies to catch trout, whereas about 24% "frequently" or "always"

used spinners and lures and about 17% "frequently" or "always" used bait. The 2012 mail survey of trout anglers, which is considered representative of resident Wisconsin trout anglers, suggests that the public meeting survey was biased towards those who fly fish for trout. Petchenik (2014) found that mail survey respondents "often" or "always" used bait (55%) or spinners and lures (44%) as compared to artificial flies (27%).

Petchenik (2014) reported that resident Wisconsin trout anglers were not technique specialists (such as those who exclusively fly fish) but rather used multiple approaches to fish for trout. Anglers who fly fish, for example, may also fish with bait, spinners, or artificial lures. Many public meeting survey participants also used multiple angling techniques with varying degrees of frequency (Table 5 (Q6)), but many were also exclusively fly fishers. Of the 49% of public meeting survey respondents who "always" fly fish (*n*=934), 59% said they "never" use bait, spinners, or artificial lures (*n*=554) and 19% did not provide any response in regards to bait, spinners, or artificial lures (*n*=173). Therefore, we can consider at least 29% (*n*=554) of public meeting survey respondents to be exclusive in their use of artificial flies to catch trout. The exclusive use of artificial flies among mail survey participants is likely less than 13%, which is the percentage who indicated "always" fly fishing for trout (Petchenik 2014). Exclusivity among bait anglers was considerably less, with about 0.3% of public meeting survey respondents indicating "always" using bait and "never" using spinners or artificial lures or flies to catch trout (*n*=5).

TABLE 5 (Q6). Frequency that survey participants fish for trout using bait, spinners or artificial lures, or flies.

	Never	Rarely	Sometimes	Frequently	Always	No response
Bait fishing	**46%** *n*=877	**14%** *n*=263	**10%** *n*=191	**13%** *n*=257	**4%** *n*=68	**13%** *n*=249
Fishing with spinners or artificial lures	**31%** *n*=584	**17%** *n*=323	**17%** *n*=315	**19%** *n*=363	**5%** *n*=97	**12%** *n*=223
Fly fishing	**10%** *n*=187	**7%** *n*=129	**9%** *n*=176	**21%** *n*=397	**49%** *n*=934	**4%** *n*=82

7. How long (in inches) must a trout be for you to consider it a quality-sized trout versus a trophy-sized trout in Wisconsin's streams and inland lakes and ponds?

Brook trout – quality size _____ **Brown trout – quality size _____**

Brook trout – trophy size _____ **Brown trout – trophy size _____**

We asked survey participants what they considered to be a quality-sized versus a trophy-sized Brook Trout or Brown Trout. Most survey participants considered a 10 inch Brook Trout and a 12 inch Brown Trout to be of quality size and a 14 inch Brook Trout and a 20 inch Brown Trout to be of trophy size (Figure 2 (Q7)).

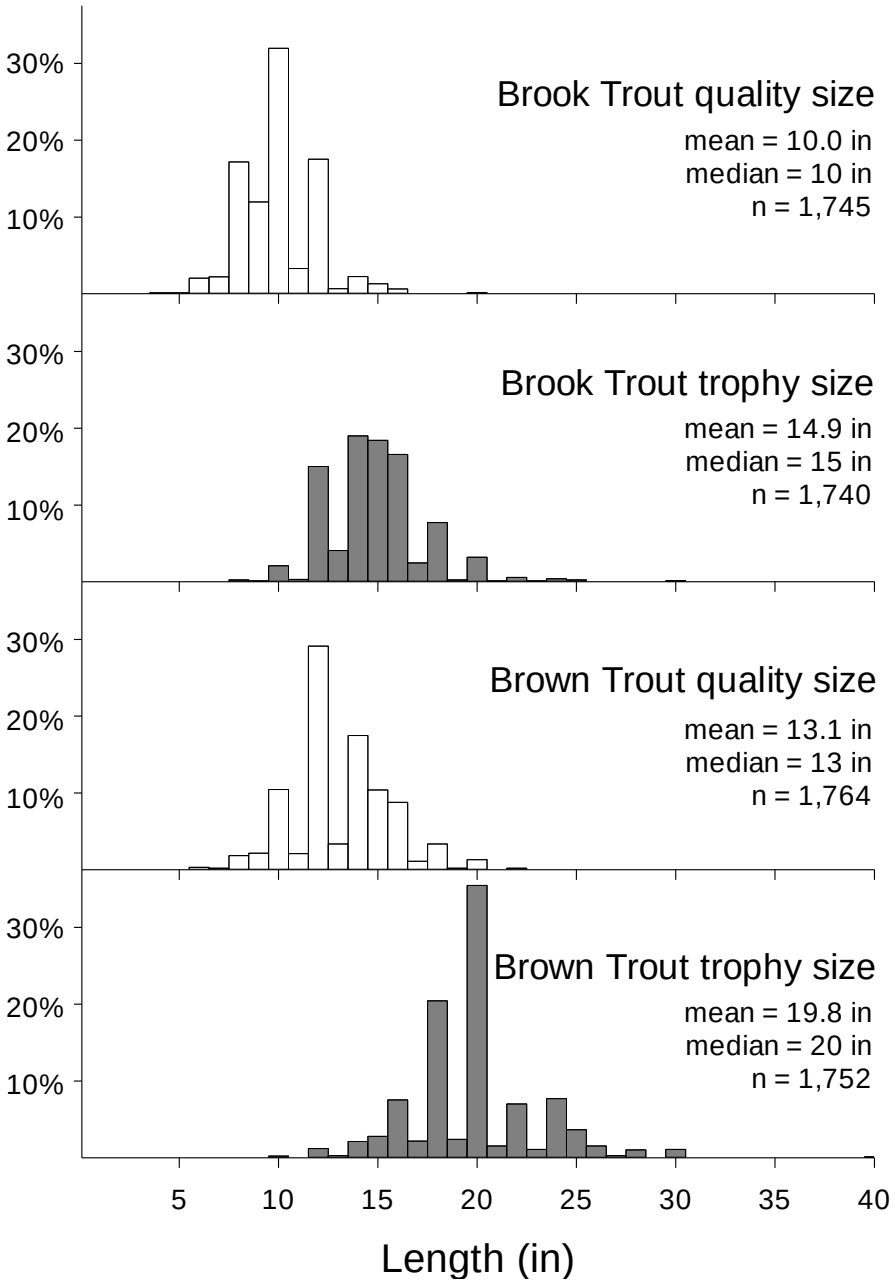

FIGURE 2 (Q7). Survey participant perspectives on quality size (white bars) versus trophy size (gray bars) for Brook Trout and Brown Trout in Wisconsin's streams and inland lakes and ponds.

8. How often do you keep trophy-sized (as described in Question 7) brook trout or brown trout?

About 88% of survey respondents "never" or "rarely" keep trophy-sized trout (as they defined trophy size in question 7) (Table 6 (Q8). However, the wording of the question confounds the percentage who catch a trophy trout and choose not to keep it with the percentage who have not caught a trophy trout but may have kept it if given the opportunity to do so. Nevertheless, the public meeting survey results suggest a trophy catch-and-release ethic exists among survey respondents. When asked as a hypothetical question by Petchenik (2014), about 47% of anglers indicated they would keep a trophy Brook Trout or Brown Trout if they caught one. Question 9 asks about consumptive harvest practices, which may better describe survey respondent attitudes towards harvest versus catch-and-release fishing.

TABLE 6 (Q8). Frequency that survey respondents keep trophy-sized Brook Trout or Brown Trout, as defined in Question 7.

Never	Rarely	Sometimes	Frequently	Always	No response
66% *n*=1,255	**22%** *n*=411	**7%** *n*=135	**1%** *n*=28	**2%** *n*=39	**2%** *n*=37

9. How often do you keep trout caught from streams to eat?

About 59% of survey respondents "never" or "rarely" keep trout caught from streams to eat (Table 7 (Q9)). About 17% "frequently" or "always" keep trout to eat. These results suggest a strong catch-and-release ethic among survey respondents. This result is in contrast to the 2012 mail survey, in which anglers expressed a clear preference for consumptive angling versus catch-and-release angling. Mail survey respondents, when asked about their angling behavior in 2011, indicated that about 66% of Brook Trout and 55% of Brown Trout that were caught were kept for consumption (Petchenik 2014).

TABLE 7 (Q9). Frequency that survey respondents keep trout caught from streams to eat.

Never	Rarely	Sometimes	Frequently	Always	No response
32% *n*=618	**27%** *n*=521	**22%** *n*=416	**12%** *n*=227	**5%** *n*=87	**2%** *n*=36

10. How often do you keep trout caught from inland lakes and ponds to eat?

Fewer survey respondents keep trout to eat from inland lakes and ponds as compared to streams, with about 73% "never" or "rarely" and about 11% "frequently" or "always" doing so (Table 8 (Q10)). Similar to survey respondents' expressed behavior towards harvesting trout from streams, this result is in contrast to the 2012 mail survey, in which anglers expressed a preference to harvesting trout from lakes and ponds (Petchenik 2014). About 71% of trout anglers who exclusively fished lakes and ponds and about 41% of

trout anglers who also fish streams "frequently" or "always" kept trout (Petchenik 2014). These results suggest that the public meeting survey was biased towards trout anglers who do not fish inland lakes and ponds and do not fish for consumptive purposes.

TABLE 8 (Q10). Frequency that survey respondents keep trout caught from inland lakes and ponds to eat.

Never	Rarely	Sometimes	Frequently	Always	No response
55% *n*=1,040	**18%** *n*=346	**13%** *n*=242	**8%** *n*=146	**3%** *n*=60	**4%** *n*=71

11. What is the minimum size and the maximum size (in inches) a brook trout must be for you to keep it for eating? Please circle one response for the minimum size and a second response for the maximum size. (If you never keep brook trout for eating please check here ____.)

No minimum 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 No maximum

About 56% (*n*=1,058) of survey respondents identified a minimum length for a Brook Trout to be acceptable for them to keep to eat, with most indicating that length to be 8 inches (31%, *n*=333) (Figure 3 (Q11)). About 45% (n=854) of survey respondents also identified a maximum length, with most indicating that length to be 12 inches (26%, *n*=219). However, about 22% (*n*=191) indicated "no maximum length," which means they were willing to keep any Brook Trout greater than some minimum size. Nineteen survey respondents (2%) were willing to keep a Brook Trout of any size ("no minimum") and about 42% indicated they never keep Brook Trout for eating (*n*=801).

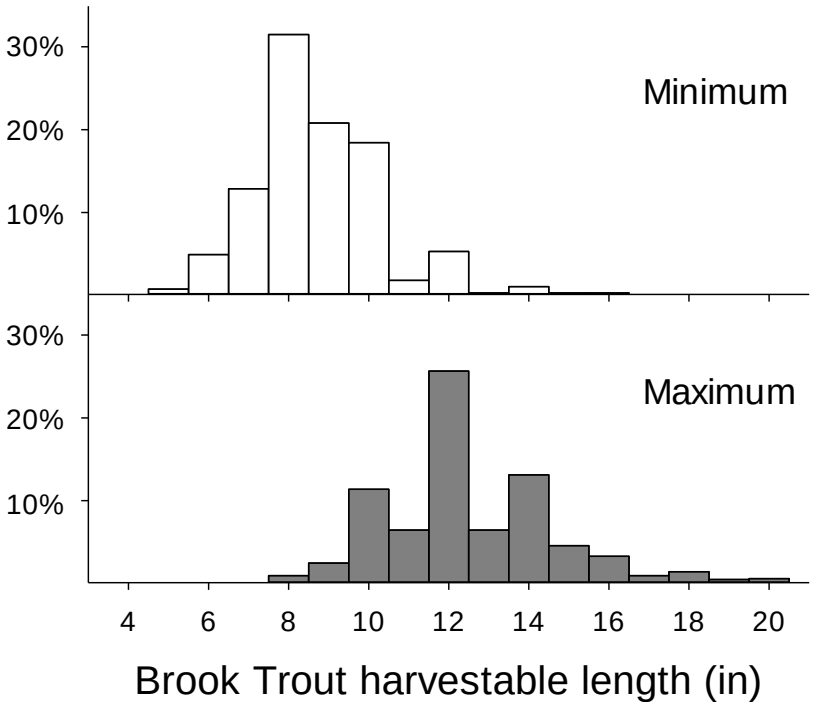

FIGURE 3 (Q11). Minimum (n=1,058) and maximum (n=854) Brook Trout lengths considered harvestable by survey respondents.

12. What is the minimum size and the maximum size (in inches) a brown trout must be for you to keep it for eating? Please circle one response for the minimum size and a second response for the maximum size. (If you never keep brown trout for eating please check here ____.)

No minimum 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 No maximum

About 59% (*n*=1,120) of survey respondents identified a minimum length for a Brown Trout to be acceptable for them to keep to eat, with most indicating that length to be 10 inches (25%, *n*=285) (Figure 4 (Q12)). About 48% (n=906) of survey respondents also identified a maximum length, with most indicating that length to be 14 inches (17%, *n*=153). However, more survey respondents indicated there was "no maximum length" (25%, *n*=225), which means they were willing to keep any Brown Trout greater than some minimum size. Sixteen survey respondents (1%) were willing to keep a Brown Trout of any size ("no minimum") and about 39% indicated they never keep Brown Trout for eating (*n*=734).

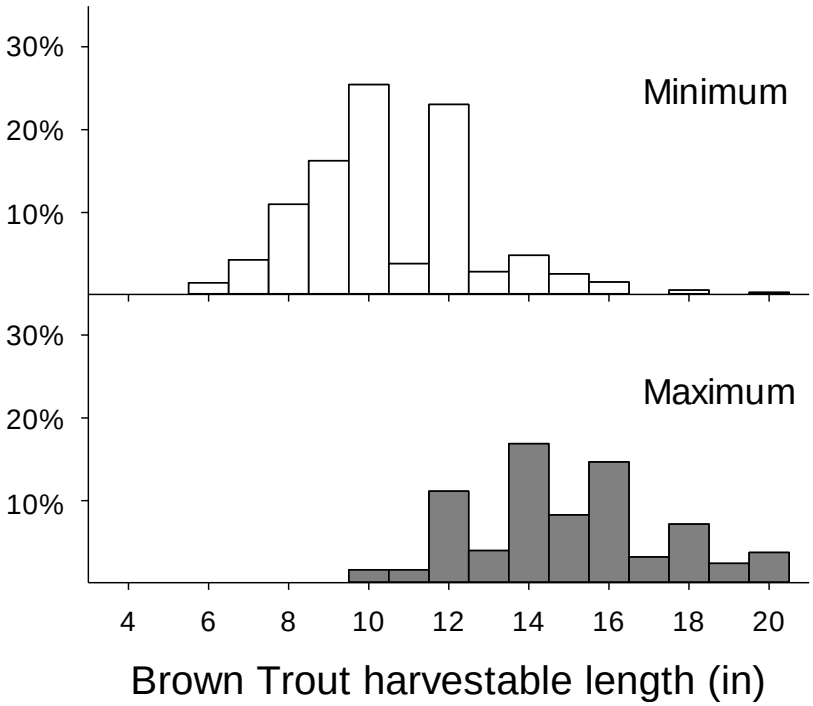

FIGURE 4 (Q12). Minimum (n=1,120) and maximum (n=906) Brown Trout lengths considered harvestable by survey respondents.

13. Listed below are different factors that characterize our trout streams. Please check the appropriate box that best describes the effect each factor has on whether or not you will fish a trout stream. If you are unsure or unfamiliar with any factor, please check the "Unsure" box in the last column.

This question posed a series of characteristics of trout streams to determine their importance to the trout angler. Survey respondents showed a clear preference to fishing in streams that support wild trout (70%) (Table 9 (Q13)). If streams are stocked with trout, survey respondents preferred to fish for "wild strain" trout (31%) versus "domestic strain" trout (9%), with 24% preferring not to fish streams stocked with "domestic strain" trout. Wild strain trout are raised from eggs collected and fertilized by wild trout and have been found to exhibit behavioral characteristics more like wild trout than like domestic trout and to survive at rates 2-4 times greater than stocked domestic trout (Mitro 2004). Survey respondents preferred to fish streams that provided a chance to catch Brook Trout (61%) and to catch Brown Trout (52%), and to catch a trophy trout (52%) and to catch many trout (50%). However, about twice as many survey respondents indicated that the chance to catch a trout they could eat was not of concern (38%) versus a preference (21%).

TABLE 9 (Q13). Survey respondent preferences towards characteristics of trout streams.

	I will only fish this type of stream	I prefer to fish this type of stream	Sometimes I fish this type of stream	I prefer not to fish this type of stream	I will never fish this type of stream	This factor does not concern me	Unsure or don't know	No response
Presence of wild trout	**4%** *n*=83	**70%** *n*=1,338	**9%** *n*=174	**0.2%** *n*=4	**0.2%** *n*=4	**8%** *n*=151	**1%** *n*=22	**7%** *n*=129
Presence of stocked "wild strain" trout	**1%** *n*=23	**31%** *n*=581	**40%** *n*=756	**3%** *n*=66	**0.3%** *n*=6	**14%** *n*=269	**3%** *n*=63	**7%** *n*=141
Presence of stocked "domestic strain" trout	**0.7%** *n*=14	**9%** *n*=173	**37%** *n*=706	**24%** *n*=452	**3%** *n*=54	**15%** *n*=285	**3%** *n*=66	**8%** *n*=155
Chance to catch a brook trout	**4%** *n*=68	**56%** *n*=1,069	**24%** *n*=464	**0.5%** *n*=10	**0.1%** *n*=2	**8%** *n*=145	**0.7%** *n*=13	**7%** *n*=134
Chance to catch a brown trout	**3%** *n*=55	**61%** *n*=1,158	**20%** *n*=375	**0.6%** *n*=11	**0.2%** *n*=3	**7%** *n*=142	**0.8%** *n*=15	**8%** *n*=146
Chance to catch a trophy trout	**3%** *n*=66	**52%** *n*=981	**26%** *n*=485	**0.3%** *n*=5	**0.3%** *n*=5	**11%** *n*=201	**0.8%** *n*=15	**8%** *n*=147
Chance to catch many trout	**3%** *n*=57	**50%** *n*=960	**28%** *n*=524	**1%** *n*=28	**0.4%** *n*=7	**9%** *n*=178	**0.6%** *n*=11	**7%** *n*=140
Chance to catch a trout I can keep to eat	**3%** *n*=62	**21%** *n*=405	**21%** *n*=400	**4%** *n*=71	**3%** *n*=58	**38%** *n*=731	**2%** *n*=36	**7%** *n*=142

14. Listed below are different factors that characterize or are related to <u>trout stream access</u>. Please check the appropriate box that best describes the effect this factor has on whether or not you will fish a trout stream. If you are unsure or unfamiliar with any factor, please check the "Unsure" box in the last column.

This question asked survey participants about their preferences regarding stream access. Survey respondents expressed a clear preference for the availability of public access to streams (65%) (Table 10 (Q14)). However, while 44% sometimes fish streams requiring landowner permission for access, 26% prefer not to fish such streams. A similar pattern of preference about stream accessibility was found in the 2012 mail survey. Anglers preferred to fish streams with public access (57%) and preferred not to fish streams requiring landowner permission (42%) (Petchenik 2014). Therefore, stream accessibility preferences may not necessarily be unique to any particular type of trout angler.

TABLE 10 (Q14). Survey respondent preferences towards trout stream access and size.

	I will only fish this type of stream	I prefer to fish this type of stream	Sometimes I fish this type of stream	I prefer not to fish this type of stream	I will never fish this type of stream	This factor does not concern me	Unsure or don't know	No response
Public access to stream is available	**13%** *n*=255	**65%** *n*=1,233	**11%** *n*=206	**0.7%** *n*=14	**0.2%** *n*=4	**3%** *n*=53	**0.3%** *n*=6	**7%** *n*=134
Landowner permission is required to access stream	**0.7%** *n*=13	**9%** *n*=174	**44%** *n*=831	**26%** *n*=491	**6%** *n*=114	**5%** *n*=94	**3%** *n*=48	**7%** *n*=140
Stream size is small (less than 10 feet wide)	**0.6%** *n*=12	**22%** *n*=426	**50%** *n*=944	**8%** *n*=159	**0.5%** *n*=9	**11%** *n*=205	**0.5%** *n*=10	**7%** *n*=140
Stream size is medium (10-30 feet wide)	**1%** *n*=20	**47%** *n*=904	**32%** *n*=611	**1%** *n*=22	**0.2%** *n*=4	**10%** *n*=198	**0.4%** *n*=8	**7%** *n*=138
Stream size is large (greater than 30 feet wide)	**0.9%** *n*=17	**23%** *n*=430	**43%** *n*=828	**11%** *n*=213	**1%** *n*=19	**12%** *n*=233	**1%** *n*=25	**7%** *n*=140

15. Listed below are different factors that characterize <u>trout stream habitat</u>. Please check the appropriate box that best describes the effect this factor has on whether or not you will fish a trout stream. If you are unsure or unfamiliar with any factor, please check the "Unsure" box in the last column.

Most survey respondents were non-preferential concerning riparian vegetation or lack thereof, with 39% to 49% indicating they sometimes fish streams with or without riparian grasses, brush, or trees (Table 11 (Q15)). And preferences to fish a particular type of stream (e.g., banks overgrown with brush or reed canary grass, 17%) were generally balanced by preferences not to fish such a stream (16%). Survey respondents did, however, show a preference to fish forested stream banks (35%) with about 5% preferring not to fish such streams.

Survey respondents also preferred to fish streams in which habitat has been restored (54%) and preferred not to fish degraded streams that had not been restored (51%) (Table 11 (Q15)). LUNKER structures are sometimes used in stream habitat restoration projects to create overhead cover for trout by mimicking undercut banks. About 38% of survey respondents preferred to fish streams with LUNKER structures versus about 34% who had no preference one way or the other; about 48% sometimes fished streams restored without LUNKER structures, with no preference one way or the other.

Survey respondents were also generally non-preferential regarding the presence (36%) or removal (40%) of beaver dams on trout streams. Beaver dams are sometimes removed to maintain free-flowing conditions in trout streams. Those with preferences, however, tended to favor not to fish streams with beaver dams present (31%) , with about 22% preferring to fish streams from which beaver dams have been removed (Table 11 (Q15)).

TABLE 11 (Q15). Survey respondent preferences concerning trout stream habitat.

	I will only fish this type of stream	I prefer to fish this type of stream	Sometimes I fish this type of stream	I prefer not to fish this type of stream	I will never fish this type of stream	This factor does not concern me	Unsure or don't know	No response
Pastured or mowed stream banks	**0.4%** *n*=8	**20%** *n*=388	**43%** *n*=826	**16%** *n*=302	**2%** *n*=35	**10%** *n*=181	**1%** *n*=20	**8%** *n*=145
Stream banks overgrown with brush or reed canary grass	**0.7%** *n*=13	**17%** *n*=333	**49%** *n*=934	**16%** *n*=300	**0.8%** *n*=15	**8%** *n*=145	**0.7%** *n*=14	**8%** *n*=151
Forested stream banks	**0.9%** *n*=17	**35%** *n*=658	**43%** *n*=823	**5%** *n*=87	**0.3%** *n*=6	**7%** *n*=130	**0.9%** *n*=17	**9%** *n*=167
Trees have been removed along stream	**0.1%** *n*=2	**15%** *n*=293	**39%** *n*=745	**23%** *n*=429	**3%** *n*=50	**9%** *n*=178	**2%** *n*=41	**9%** *n*=167

banks								
Stream habitat has been restored	**2%** *n*=29	**54%** *n*=1,023	**30%** *n*=578	**1%** *n*=22	**0.5%** *n*=9	**4%** *n*=84	**0.6%** *n*=12	**8%** *n*=148
Stream has been restored with LUNKER structures	**1%** *n*=19	**38%** *n*=721	**34%** *n*=650	**5%** *n*=88	**0.6%** *n*=12	**9%** *n*=179	**5%** *n*=87	**8%** *n*=149
Stream has been restored without LUNKER structures	**0.5%** *n*=10	**22%** *n*=419	**48%** *n*=909	**3%** *n*=57	**0.6%** *n*=11	**12%** *n*=238	**5%** *n*=100	**8%** *n*=161
Stream has not been restored and is degraded (eroded banks, wide shallow channel, etc.)	**0.3%** *n*=5	**3%** *n*=50	**19%** *n*=369	**51%** *n*=971	**13%** *n*=247	**4%** *n*=85	**1%** *n*=28	**8%** *n*=150
Beaver dams are present	**0.4%** *n*=7	**4%** *n*=73	**36%** *n*=683	**31%** *n*=593	**5%** *n*=87	**12%** *n*=221	**5%** *n*=93	**8%** *n*=148
Beaver dams have been removed	**0.5%** *n*=10	**22%** *n*=428	**40%** *n*=764	**6%** *n*=116	**0.9%** *n*=17	**15%** *n*=278	**7%** *n*=141	**8%** *n*=151

16. Listed below are different factors that characterize trout stream regulations. Please check the appropriate box that best describes the effect this factor has on whether or not you will fish a trout stream. If you are unsure or unfamiliar with any factor, please check the "Unsure" box in the last column.

This question was written to elicit survey participant preferences concerning trout stream regulations. Survey respondents showed a greater preference for regulations that allow catch and release only (42%) compared to regulations that allow harvest (24%) (Table 12 (Q16)). These results are consistent with survey respondents' attitudes towards harvesting trout as captured in questions 8-10. However, these results are contrary to those from the 2012 mail survey, in which 76% of stream anglers expressed support for regulations allowing trout harvest and 61% expressed opposition to catch-and-release-only regulations on the streams they fished (Petchenik 2014).

Consistent with the preference of survey respondents for regulations that allow catch and release only, survey respondents also preferred to fish streams with regulations that allow artificial lures only (42%)

and fly fishing only (38%) and preferred not to fish catch and release streams that have regulations allowing bait fishing (35%) (Table 12 (Q16)). Despite research that shows bait fishing can be compatible with catch and release trout angling regulations (Schill 1996), a perception persists among anglers that bait fishing and catch and release fishing are incompatible. About 42% of Wisconsin resident trout anglers oppose regulations that allow bait fishing on catch and release streams, compared to 29% who support such regulations (Petchenik 2014).

Although survey respondents were unwilling to keep trout below a certain minimum size (Figures 3 (Q11) and 4 (Q12)), there was a clear preference not to fish streams that had no minimum size limit (38%) (Table 12 (Q16)). This result suggests survey participants perceive a value in protecting small trout and in ensuring that others are regulated in their angling behavior to protect those trout. Survey participants also opposed high bag limits. About 38% preferred not to fish streams with regulations allowing high bag limits. "High bag limit" was not defined, but the response to this question can be interpreted as a perception of the survey respondent that harvest regulation is necessary to protect a desired fishery. As such, most survey respondents indicated they sometimes fish streams with low bag limits and moderate to high size limits, with a slight preference to fish such streams (Table 12 (Q16)).

Survey respondents were mixed in their opinions concerning uniform versus different regulations among sections of a stream. About 20% were not concerned with this factor, and 1% to 4% felt strongly enough that they would "always" or "never" fish a stream based on this factor (Table 12 (Q16)). About 30% preferred uniform regulations along a stream (versus 9% who preferred not to), but about equal percentages preferred (19%) versus not preferred (17%) different regulations along a stream. Survey respondents were mixed in opinion on uniformity in regulations among nearby streams. About 29% were not concerned with this factor and about 24% would sometimes fish such streams, but 22% preferred such uniformity versus 9% who preferred not to fish such streams.

TABLE 12 (Q16). Survey respondent preferences concerning trout stream regulations.

	I will only fish this type of stream	I prefer to fish this type of stream	Sometimes I fish this type of stream	I prefer not to fish this type of stream	I will never fish this type of stream	This factor does not concern me	Unsure or don't know	No response
Regulations allow harvest of trout	**6%** *n*=106	**24%** *n*=465	**34%** *n*=649	**9%** *n*=180	**0.6%** *n*=11	**17%** *n*=329	**0.7%** *n*=13	**8%** *n*=152
Regulations allow catch and release only	**2%** *n*=36	**42%** *n*=795	**27%** *n*=508	**9%** *n*=172	**5%** *n*=97	**7%** *n*=136	**0.5%** *n*=10	**8%** *n*=151
Regulations allow artificial lures only	**3%** *n*=51	**42%** *n*=806	**26%** *n*=497	**9%** *n*=166	**4%** *n*=73	**7%** *n*=137	**1%** *n*=21	**8%** *n*=154
Regulations allow fly fishing only	**3%** *n*=53	**38%** *n*=732	**17%** *n*=331	**11%** *n*=213	**10%** *n*=200	**10%** *n*=181	**2%** *n*=34	**8%** *n*=161

Regulations allow bait fishing on catch & release streams	**0.5%** *n*=10	**6%** *n*=108	**22%** *n*=421	**35%** *n*=665	**14%** *n*=268	**11%** *n*=217	**3%** *n*=64	**8%** *n*=152
Regulations with no size limits	**0.3%** *n*=6	**6%** *n*=111	**18%** *n*=345	**38%** *n*=716	**13%** *n*=244	**13%** *n*=257	**4%** *n*=69	**8%** *n*=157
Regulations with high bag limits	**0.3%** *n*=6	**6%** *n*=119	**18%** *n*=346	**38%** *n*=721	**13%** *n*=240	**14%** *n*=262	**3%** *n*=56	**8%** *n*=155
Regulations with a moderate size limit and a low bag limit	**0.4%** *n*=8	**25%** *n*=468	**38%** *n*=716	**11%** *n*=216	**2%** *n*=47	**13%** *n*=244	**2%** *n*=42	**9%** *n*=164
Regulations with a high size limit and bag limit of one	**0.5%** *n*=9	**22%** *n*=417	**33%** *n*=620	**17%** *n*=321	**4%** *n*=75	**13%** *n*=252	**3%** *n*=48	**9%** *n*=163
Regulations allow harvest of trout below some maximum size (such as 12 or 13 inches)	**0.7%** *n*=13	**17%** *n*=322	**38%** *n*=721	**15%** *n*=288	**3%** *n*=52	**14%** *n*=259	**5%** *n*=88	**9%** *n*=162
Uniform regulations on the entire length of stream	**2%** *n*=31	**30%** *n*=572	**23%** *n*=444	**9%** *n*=172	**3%** *n*=56	**21%** *n*=408	**4%** *n*=67	**8%** *n*=155
Different regulations on different sections of the same stream	**1%** *n*=21	**19%** *n*=357	**30%** *n*=569	**17%** *n*=331	**4%** *n*=70	**19%** *n*=360	**2%** *n*=46	**8%** *n*=151
Nearby streams have the same regulations	**0.8%** *n*=16	**22%** *n*=428	**24%** *n*=465	**9%** *n*=163	**2%** *n*=42	**29%** *n*=558	**4%** *n*=83	**8%** *n*=150

(uniform regulations in a geographic area)

17. For each item in the list below, please check the one box that best indicates how you feel it has changed over time. If you are unsure or unfamiliar with any item in the list, please check the "Unsure" box in the last column.

This question asked whether different characteristics of trout fisheries have become better or worse over time. Survey respondents generally thought trout fishing opportunities in streams have become "somewhat" or "much" better versus worse by a ratio of about 5 to 1 and that trout size and numbers had become better versus worse by a ratio of about 3 to 1 (but by about 3 to 2 for number of trophy-sized trout) (Table 13 (Q17)). About half of the survey respondents were unsure or didn't know if inland lake and pond trout fisheries had changed over time, and of those who did have an opinion, most thought they had stayed the same (Table 13 (Q17)).

Most survey respondents thought that landowner attitudes towards anglers had remained the same (25%) and that the following had become "somewhat better": agricultural runoff (27%), groundwater protection (29%), and water quality in streams (35%) (Table 13 (Q17)). However, 22% to 34% of survey respondents were unsure, did not know, or did not respond.

TABLE 13 (Q17). Survey respondent perceptions on how different characteristics of trout fisheries may or may not have changed over time.

	Become much better	Become somewhat better	Stayed the same	Become somewhat worse	Become much worse	Unsure or don't know	No response
Trout fishing opportunities in streams	**26%** *n*=504	**33%** *n*=621	**11%** *n*=211	**8%** *n*=151	**3%** *n*=51	**8%** *n*=146	**12%** *n*=221
Size of trout in streams	**13%** *n*=254	**31%** *n*=591	**19%** *n*=356	**13%** *n*=244	**3%** *n*=56	**10%** *n*=181	**12%** *n*=223
Number of trout in streams	**21%** *n*=395	**29%** *n*=561	**15%** *n*=283	**11%** *n*=205	**3%** *n*=64	**9%** *n*=172	**12%** *n*=225
Number of quality-sized trout in streams	**15%** *n*=288	**29%** *n*=554	**16%** *n*=313	**13%** *n*=250	**5%** *n*=87	**10%** *n*=191	**12%** *n*=222
Number of trophy-sized trout in streams	**10%** *n*=183	**22%** *n*=423	**19%** *n*=371	**15%** *n*=280	**7%** *n*=127	**15%** *n*=295	**12%** *n*=226

Trout fishing opportunities in inland lakes and ponds	**3%** *n*=59	**11%** *n*=213	**16%** *n*=297	**5%** *n*=97	**2%** *n*=33	**51%** *n*=975	**12%** *n*=231
Size of trout in inland lakes and ponds	**2%** *n*=37	**8%** *n*=154	**16%** *n*=309	**6%** *n*=107	**1%** *n*=25	**55%** *n*=1,049	**12%** *n*=224
Number of trout in inland lakes and ponds	**2%** *n*=44	**8%** *n*=151	**14%** *n*=268	**7%** *n*=126	**2%** *n*=34	**55%** *n*=1,045	**12%** *n*=237
Landowner attitudes towards trout anglers	**5%** *n*=94	**18%** *n*=346	**25%** *n*=470	**13%** *n*=244	**6%** *n*=106	**22%** *n*=417	**12%** *n*=228
Agricultural runoff	**5%** *n*=103	**27%** *n*=509	**15%** *n*=279	**17%** *n*=327	**8%** *n*=151	**16%** *n*=307	**12%** *n*=229
Groundwater protection	**6%** *n*=118	**29%** *n*=553	**17%** *n*=321	**12%** *n*=238	**5%** *n*=100	**18%** *n*=347	**12%** *n*=228
Water quality in trout streams	**13%** *n*=256	**35%** *n*=675	**16%** *n*=299	**11%** *n*=203	**2%** *n*=38	**10%** *n*=199	**12%** *n*=235

18. Please indicate your opinion on the fishing seasons in the following list. If you are unsure or unfamiliar with any item in the list, please check the "Unsure" box in the last column.

This question asked survey respondents to describe their support or lack thereof for trout fishing seasons. Most survey respondents "strongly support" the current regular open season for trout streams (38%) and the current early catch and release season for trout streams (44%). Support in general for the current regular open season (59%) was less than the 75% level of support among anglers identified by the 2012 mail survey (Petchenik 2014). In contrast, while 62% of survey respondents supported the current early catch and release season, only 34% of anglers support the early season according to the 2012 mail survey (Petchenik 2014).

There was no clear consensus of opinion towards any changes to the current season structure. There was some strong support for extending the catch and release season to include autumn fishing (32% and 35%) and to start prior to the current March opening (27%), but survey respondents overall were of mixed opinions (Table 14 (Q18)). The support for increasing seasonal catch and release fishing opportunities was consistent with support for catch and release as a regulation option as identified in Table 12 (Q16). However, 40% to 48% of anglers, according to the 2012 mail survey, opposed increasing catch and release opportunities by extending seasons (Petchenik 2014).

There was little support or opposition for seasons pertaining to fishing inland lakes, with about 30% of survey respondents neutral and another 30% unsure or not knowing. However, as identified earlier (Tables 3 (Q4) and 4 (Q5)), survey respondents were more interested in fishing streams than lakes.

TABLE 14 (Q18). Survey respondent opinions on trout angling season structure for fishing streams and inland lakes.

	Strongly support	Somewhat support	Neutral	Somewhat oppose	Strongly oppose	Unsure or don't know	No response
Current regular open season for streams (first Saturday in May through September 30)	**38%** *n*=725	**21%** *n*=402	**14%** *n*=262	**9%** *n*=163	**4%** *n*=84	**1%** *n*=17	**13%** *n*=252
Current early catch & release season for streams (beginning on the first Saturday in March)	**44%** *n*=846	**18%** *n*=344	**12%** *n*=227	**6%** *n*=108	**6%** *n*=120	**1%** *n*=26	**12%** *n*=234
Start catch & release season earlier	**27%** *n*=509	**13%** *n*=253	**24%** *n*=450	**9%** *n*=176	**13%** *n*=241	**2%** *n*=40	**12%** *n*=236
Start regular open season earlier	**14%** *n*=265	**13%** *n*=248	**23%** *n*=430	**16%** *n*=313	**20%** *n*=385	**1%** *n*=28	**12%** *n*=236
End regular open season later	**23%** *n*=436	**22%** *n*=410	**13%** *n*=247	**12%** *n*=225	**16%** *n*=304	**2%** *n*=29	**13%** *n*=254
Add catch & release season after regular open season ends	**35%** *n*=674	**18%** *n*=339	**10%** *n*=181	**8%** *n*=156	**15%** *n*=292	**2%** *n*=33	**12%** *n*=230
Extend the catch & release season to begin October 1, thereby allowing for year-round trout fishing (except for closure during deer season)	**32%** *n*=606	**16%** *n*=305	**8%** *n*=161	**10%** *n*=193	**20%** *n*=379	**2%** *n*=38	**12%** *n*=223
Current inland lake season (beginning on the first Saturday in May; closing date varies by lake)	**7%** *n*=135	**12%** *n*=236	**30%** *n*=564	**3%** *n*=61	**2%** *n*=47	**33%** *n*=624	**12%** *n*=238
Extend the inland lake season to the first Saturday in March	**8%** *n*=152	**11%** *n*=215	**28%** *n*=527	**4%** *n*=79	**4%** *n*=76	**33%** *n*=624	**12%** *n*=232

19. How satisfied are you with each of the following aspects of Wisconsin inland trout fishing? If you are unsure or unfamiliar with any item in the list, please check the "Unsure" box in the last column.

Survey respondents were generally satisfied with the category regulation system and season structure for fishing trout streams in Wisconsin. About 63% were satisfied with the regulations and about 60% were satisfied with the seasons (Table 15 (Q19)). These results are consistent with results from the 2012 mail survey, in which anglers were generally satisfied with regulations (49%) and seasons (62%) (Petchenik 2014). In regards to inland lakes and ponds, about 47% of survey respondents were unsure, didn't know, or did not respond, and those who did respond were largely neutral (21-22%).

Survey respondents were also generally satisfied with the quality of fishing opportunities (65%), the stream access program (63%), the stream habitat restoration program (69%), and overall DNR management of trout fisheries (67%) (Table 15 (Q19)). Survey respondents were largely neutral (26%) or "somewhat" satisfied (25%), however, with the beaver control program. More survey respondents were unsure or did not know how they felt about the beaver control program (16%) as compared to the stream access (3%) and stream habitat restoration (2%) programs. The 2012 mail survey found that anglers familiar with these programs were also satisfied with them, but also with more uncertainty concerning the beaver control program (Petchenik 2014).

TABLE 15 (Q19). Survey respondent satisfaction with inland trout fishing in Wisconsin.

	Very satisfied	Somewhat satisfied	Neutral	Somewhat dissatisfied	Very dissatisfied	Unsure or don't know	No response
Category regulation system for streams	**27%** *n*=514	**36%** *n*=680	**11%** *n*=204	**8%** *n*=149	**4%** *n*=69	**3%** *n*=60	**12%** *n*=229
Category regulation system for inland lakes and ponds	**11%** *n*=206	**18%** *n*=336	**21%** *n*=394	**3%** *n*=53	**2%** *n*=29	**34%** *n*=645	**13%** *n*=242
Trout fishing seasons for streams	**22%** *n*=410	**38%** *n*=724	**7%** *n*=133	**15%** *n*=280	**5%** *n*=91	**1%** *n*=26	**13%** *n*=241
Trout fishing seasons for inland lakes and ponds	**9%** *n*=173	**17%** *n*=331	**22%** *n*=416	**5%** *n*=88	**1%** *n*=16	**34%** *n*=639	**13%** *n*=242
Quality fishing opportunities	**26%** *n*=500	**39%** *n*=747	**9%** *n*=170	**9%** *n*=172	**3%** *n*=51	**1%** *n*=25	**13%** *n*=240
Stream access program	**25%**	**38%**	**11%**	**9%**	**2%**	**3%**	**13%**

	n=474	*n*=726	*n*=208	*n*=162	*n*=35	*n*=58	*n*=242
Stream habitat restoration program	**31%** *n*=594	**38%** *n*=716	**8%** *n*=157	**6%** *n*=118	**2%** *n*=37	**2%** *n*=44	**13%** *n*=239
Beaver control program	**9%** *n*=174	**25%** *n*=475	**26%** *n*=494	**8%** *n*=155	**3%** *n*=58	**16%** *n*=309	**13%** *n*=240
Overall DNR management of trout fisheries	**27%** *n*=518	**40%** *n*=768	**9%** *n*=168	**7%** *n*=124	**3%** *n*=58	**2%** *n*=32	**12%** *n*=237

20. What three trout streams in Wisconsin do you consider to be the best for brook trout fishing and for brown trout fishing?

Brook Trout Streams	**Brown Trout Streams**
1	**1**
2	**2**
3	**3**

Anglers responded to this question by naming about 2,100 streams for Brook Trout and about 2,500 streams for Brown Trout, with many streams named by multiple survey respondents.

Some of the more popular Brook Trout streams included the following (in alphabetical order): Ash, Big Spring, Bois Brule, Cady, East Branch Eau Claire, Flume, Kinnickinnic, Lawrence, Little Wolf, Lost, Oconto, Pine, Plum, Prairie, Rush, Tainter, and West Fork Kickapoo.

Some of the more popular Brown Trout streams included the following (in alphabetical order): Bad Axe, Big Green, Black Earth Creek, Blue, Bois Brule, Camp, Castle Rock, Elk, Kickapoo, Kinnickinnic, Mecan, Namekagon, Oconto, Pine, Rush, Tainter, Timber Coulee, Tomorrow, West Fork Kickapoo, White, Willow, and Wolf.

21. Have you stopped fishing any trout streams in Wisconsin that you used to fish in the past?

Yes ____ → go to question 22 **No ____ → skip to question 23**

About 39% of survey respondents checked "yes" (*n*=745), indicating that they did stop fishing one or more trout streams in Wisconsin that they used to fish in the past. About 49% checked "no" (*n*=934) and 12% gave no response (*n*=226).

22. For any streams that you used to fish but now choose not to fish, please indicate the reason why by checking all appropriate boxes below. You may write the names of such streams under the reason why you no longer fish them. (If this does not apply to you, please check here ___.):

About 65% (*n*=1,243) of the survey participants did not select any of the eight listed reasons for why they may have chosen to no longer fish a particular stream. Of the 35% who did select one or more reason why they no longer fish a particular stream, 10% selected one reason (*n*=196), 13% selected two (*n*=248), 8% selected three (*n*=144), 3% selected four (*n*=48), 1% selected five (*n*=21), 0.2% selected six (*n*=3), and 0.1% selected seven reasons (*n*=2).

25% (*n*=474) Trout numbers have decreased

16% (*n*=299) Trout size has decreased

13% (*n*=240) Access has become difficult (landowner posted)

10% (*n*=184) Access has become difficult because of overgrown stream banks

4% (*n*=68) Regulations are difficult to understand

4% (*n*=72) I don't like the regulations

3% (*n*=51) Regulations no longer allow me to keep a trout

3% (*n*=65) I no longer have the youth and stamina to get from my car to my favorite fishing spot

Lastly, just a couple of questions that will help us compare your answers to those of other trout anglers.

23. In which Wisconsin county is your primary residence located? _____ county

If Wisconsin is not your primary residence, in what state do you live in? _____

Wisconsin residents accounted for 1,373 surveys representing 69 counties. Most survey respondents came from the greater-Madison, Green Bay, and Milwaukee areas. There were 13 counties with each having more than 25 survey respondents (Figure 5 (Q23)). There were 25 or fewer respondents from 57 counties and no respondents from 3 counties (Lafayette, Marquette, and Menominee).

Non-Wisconsin residents accounted for 291 survey responses representing 24 states (Figure 6 (Q23)). Most non-Wisconsin residents identified Illinois (118) or Minnesota (117) as their state of primary residence.

A county or state of residence was not identified by 241 survey respondents.

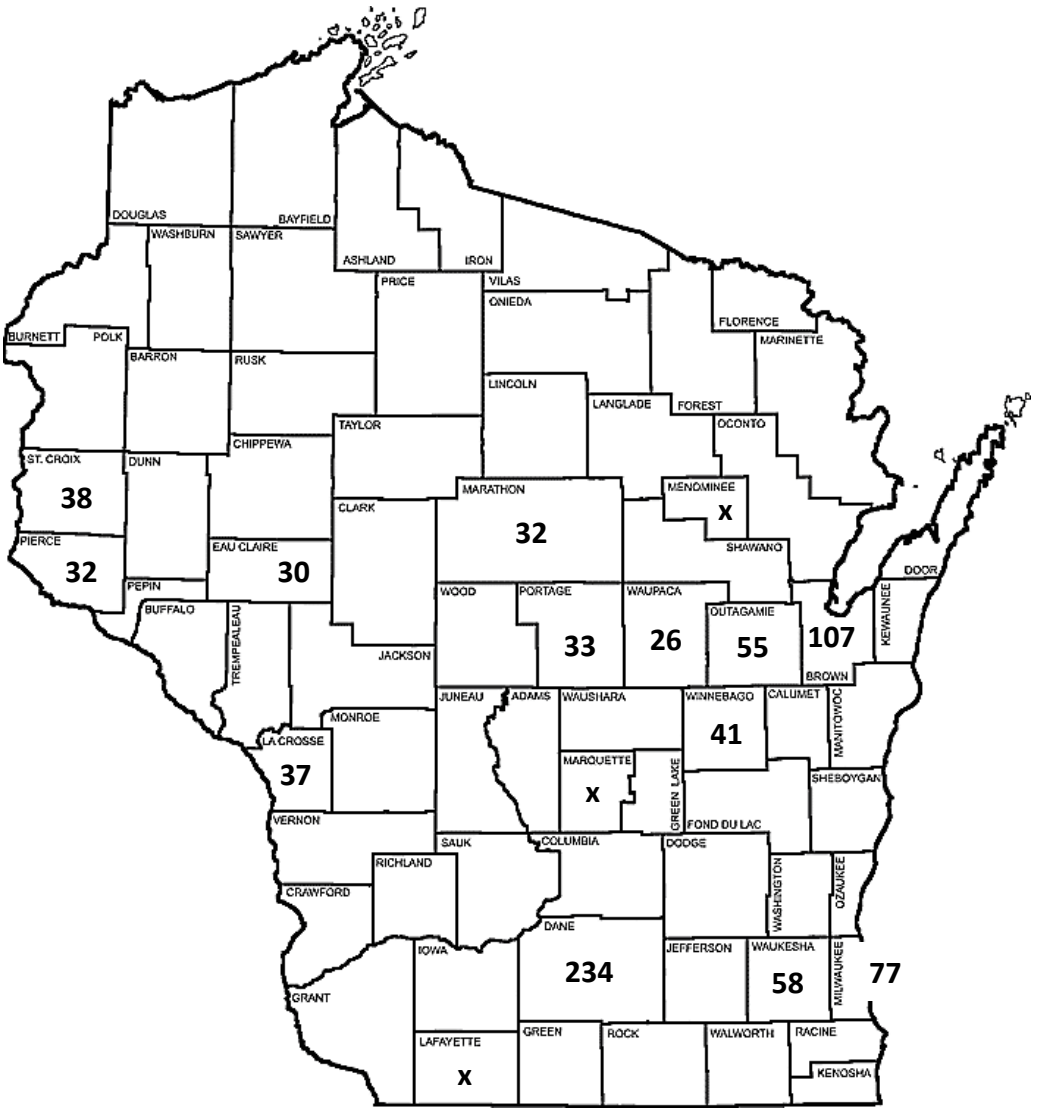

FIGURE 5 (Q23). Map showing survey respondent counties of residence. Counties with more than 25 survey respondents show the actual number of completed surveys for that county. Blank counties were represented by 25 or fewer survey respondents. No survey respondents resided in Lafayette, Marquette, or Menominee counties (identified by "x").

FIGURE 6 (Q23). Map showing 24 states represented by survey respondents (identified by the black symbols). Number of survey respondents from Illinois and Minnesota are represented by numbers on the map.

24. What is your age? I am ____ years old.

The age of survey respondents ranged from 6 to 86 years old, with most between the ages of 23 and 70 (Figure 6 (Q24)).

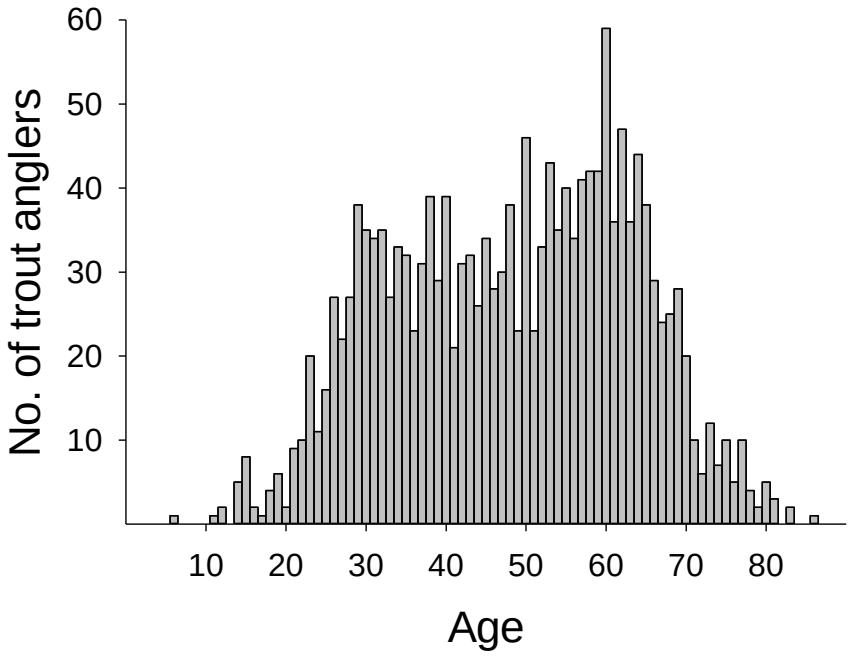

Figure 6 (Q24). Number of survey respondents by age.

25. Are there any comments or suggestions you would like to add? Are there any questions you would like to see added to our survey?

Many survey respondents both at the public meetings and online provided written comments and suggestions about the trout management program in Wisconsin. These comments are included in Appendix 1 with only personally identifying information removed.

References

Mitro, M. G. 2004. Stocking trout of wild parentage to restore wild populations: an evaluation of Wisconsin's wild trout stocking program. Pages 255-264 in S. E. Moore, R. F. Carline, and J. Dillon, editors. Working together to ensure the future of wild trout: Proceedings of Wild Trout VIII. Yellowstone National Park, Wyoming.

Petchenik, J. 2014. Trout fishing in Wisconsin: angler behavior, program assessment and regulation and season preferences. Wisconsin Department of Natural Resources, 126 pages. (DNR publication, *in press*)

Schill, D. J. 1996. Hooking mortality of bait-caught rainbow trout in an Idaho trout stream and a hatchery: implications for special-regulation management. North American Journal of Fisheries Management 16: 348-356.

Acknowledgments

We thank the Wisconsin Department of Natural Resources Trout Team for their review during the development of this survey and their implementation of the survey at public meetings across Wisconsin in March 2011. Trout Team members, in addition to the authors of this report, included Michael Aquino, David Bartz, Joanna Griffin, Travis Motl, Paul Piszczek, David Seibel, Shawn Sullivan, Gene Van Dyck, and Jordan Weeks. We also thank the following individuals from the Wisconsin DNR for their assistance with public meeting surveys: Heath Benike, Ron Benjamin, Justine Hasz, Steve Hogler, Dave Neuswanger, Scott Toshner, Mike Vogelsang, Douglas Welch, and Jamison Wendel. We thank Lisa Gaumnitz for her assistance in publicizing the public meetings and online availability of the survey. We thank Alisa Santiestaban for her assistance in implementing the survey online. And we thank Justin Haglund for his assistance with data entry of the public meeting surveys.

Appendix 1. Public meeting and online survey respondent comments about the trout management program in Wisconsin (see **2011_Trout_Survey_Question_25.doc**).